

Appl. No. 10/603,552  
Atty. Docket No. 2003B064  
Amdmt. dated February 9, 2006  
Reply to Office Action of November 9, 2005

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### Amendments to the Claims

This listing of claims will replace all prior versions and listing of claims in this application.

### Listing of Claims:

1. (Currently amended) A process for producing olefin(s) from oxygenates, the process comprising the steps of:
  - (a) contacting an oxygenate feed stream with an oxygenate-to-olefin catalyst to produce an effluent stream comprising water, carbon dioxide and olefin(s); and
  - (b) quenching the effluent stream with a quench medium having a pH above 7.0 to produce an olefin stream comprising olefin(s) and a quench bottoms stream containing carbon dioxide;
  - (c) lowering pH of the quench bottoms stream to separate carbon dioxide from the quench bottoms stream and form a degasified quench bottoms stream; and
  - (d) fractionating oxygenate hydrocarbons from the degasified quench bottoms stream.
2. (Original) The process of claim 1, wherein the effluent stream further comprises carbon dioxide and the step of (b) quenching removes 5 wt.% or more of the carbon dioxide from the effluent stream based upon the total amount of carbon dioxide in the effluent stream before the step of (b) quenching.
3. (Original) The process of claim 1, wherein the step of (b) quenching removes 95 wt.% or more of the water from the effluent stream based upon the total amount of water in the effluent stream before the step of (b) quenching.
4. (Original) The process of claim 1, wherein the effluent stream further comprises alcohol and the step of (b) quenching removes 95 wt.% or more of alcohol from the effluent stream based upon the total amount of alcohol in the effluent stream before the step of (b) quenching.

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5. (Original) The process of claim 1, wherein the effluent stream further comprises aldehydes and/or ketones and the step of (b) quenching removes from about 25 wt.% to about 95 wt.% of the aldehydes and/or ketones from the effluent stream based upon the total amount of aldehydes and/or ketones in the effluent stream before the step of (b) quenching.
6. (Original) The process of claim 1 wherein the effluent stream further comprises organic acids and the step of (b) quenching removes 95 wt.% or more of organic acids from the effluent stream based upon the total amount of organic acids in the effluent stream before the step of (b) quenching.
7. (Original) The process of claim 1, wherein the step of (b) quenching uses a quench medium that is an aqueous solution.
8. (Original) The process of claim 7, wherein the quench medium has a pH ranging from 7.1 to about 11.5.
9. (Canceled)
10. (Original) The process of claim 1, wherein the quench medium contains caustic.
11. (Original) The process of claim 1, wherein the effluent stream further comprises methanol.
12. (Original) The process of claim 1, wherein the effluent stream further comprises from about 0.05 wt.% to about 5 wt.% alcohol based upon the total weight of the effluent stream before the step of (b) quenching.

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13. (Original) The process of claim 1, wherein the effluent stream further comprises from about 0.05 wt.% to about 5 wt.% methanol based upon the total weight of the effluent stream before the step of (b) quenching.
14. (Original) A process for making a polyolefin product comprising polymerizing the olefin produced in claim 1 to make the polyolefin product.
- 15-28. (Canceled)
29. (Currently amended) A process for purifying an effluent stream withdrawn from an oxygenate-to-olefin reactor, the effluent stream comprising olefin(s), water and carbon dioxide, the process comprising quenching the effluent stream with a quench medium having a pH above 7 thereby removing a majority of the water and removing at least a portion of the carbon dioxide in a quench bottoms stream; lowering pH of the quench bottoms stream to form a degasified quench bottoms stream; and fractionating oxygenate hydrocarbons from the degasified quench bottoms stream.
30. (Original) The process of claim 29, wherein the process removes 5 wt.% or more of the carbon dioxide from the effluent stream based upon the total amount of carbon dioxide in the effluent stream before the step of quenching.
31. (Original) The process of claim 29, wherein the process removes 95 wt.% or more of the water from the effluent stream based upon the total amount of water in the effluent stream before the step of quenching.
32. (Original) The process of claim 29, wherein the effluent stream further comprises alcohol and the process removes 95 wt.% or more of alcohol from the effluent stream based upon the total amount of alcohol in the effluent stream before the step of quenching.

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33. (Original) The process of claim 29, wherein the effluent stream further comprises aldehydes and/or ketones and the process removes from about 25 wt.% to about 95 wt.% of the aldehydes and/or ketones from the effluent stream based upon the total amount of aldehydes and/or ketones in the effluent stream before the step of quenching.
34. (Original) The process of claim 29, wherein the effluent stream further comprises organic acids and the process removes 95 wt.% or more of organic acids from the effluent stream based upon the total amount of organic acids in the effluent stream before the step of quenching.
35. (Original) The process of claim 29, wherein the quench medium is an aqueous solution.
36. (Original) The process of claim 35, wherein the quench medium has a pH ranging from 7.1 to about 11.5.
37. (Canceled)
38. (Original) The process of claim 29, wherein the quench medium contains caustic.
39. (Original) The process of claim 29, wherein the effluent stream further comprises methanol.
40. (Original) The process of claim 29, wherein the effluent stream further comprises from about 0.05 wt.% to about 5 wt.% alcohol based upon the total weight of the effluent stream before the step of quenching.

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41. (Original) The process of claim 29, wherein the effluent stream further comprises from about 0.05 wt.% to about 5 wt.% methanol based upon the total weight of the effluent stream before the step of quenching.
42. (Original) A process for making a polyolefin product comprising polymerizing the olefin produced in claim 29 to make the polyolefin product.
- 43-55. (Canceled)
56. (New) The process of claim 1, wherein the pH of the quench bottoms stream is lowered to be at a pH of from 6 to 9.
57. (New) The process of claim 29, wherein the pH of the quench bottoms stream is lowered to be at a pH of from 6 to 9.